

Please replace line 1 of page 34 with the following:

--MEDICAL APPLICATIONS OF ARTIFICIAL OLFACTOMETRY--

IN THE CLAIMS:

Please add new claims 24-31 as follows:

1                   --24. (New) A method for comparing the analyte profiles of mammalian  
2 breath samples, said method comprising:

3                   (a) contacting an array of sensors with a sample of mammalian breath to  
4 identify analytes in said sample; and

5                   (b) comparing the results of the analysis with a stored mammalian breath  
6 analyte profile, thereby comparing the analyte profiles of mammalian breath samples.

1                   25. (New) The method of claim 24, wherein said stored mammalian  
2 breath analyte profile is generated by:

3                   (a) contacting an array of sensors with a sample of mammalian breath to  
4 identify analytes in said sample; and

5                   (b) storing the results in a computer-readable format.

1                   26. (New) The method of claim 24, wherein said analyte is a marker  
2 gas.

1                   27. (New) The method of claim 26, wherein said marker gas is a  
2 member selected from the group consisting of alkanes, alkenes, alkynes, dienes, alicyclic  
3 hydrocarbons, arenes, alcohols, ethers, ketones, aldehydes, carbonyls, carbanions,  
4 polynuclear aromatics, biomolecules, sugars, isoprenes isoprenoids, VOC, VOA, indoles,  
5 skatoles, diamines, pyridines, picolines, an off-gas of a microorganism and fatty acids.

1                   28. (New) The method of claim 27, wherein said marker gas is an off  
2 gas of a member selected from the group consisting of Prevotella intermedia,  
3 Fusobacterium nucleatum, Porphyromonas gingivalis, Porphyromonas endodontalis,

4 Prevotella loescheii, Hemophilus parainfluenzae, Stomatococcus mucii, Treponema  
5 denticola, Veillonella species, Peptostreptococcus anaerobius, Micros prevotii,  
6 Eubacterium limosum, Centipeda periodontii, Selemonad aremidis, Eubacterium species,  
7 Bacteriodes species, Fusobacterium periodonticum, Prevotella melaninogenica,  
8 Klebsiella pneumoniae, Enterobacter cloacae, Citrobacter species and Stomatococcus  
9 mucilaginus.

1 29. (New) The method of claim 24, wherein said array of sensors  
2 comprises a member selected from the group consisting of a surface acoustic wave  
3 sensor, a quartz microbalance sensor; a conductive composite; a chemiresistor; a metal  
4 oxide gas sensor and a conducting polymer sensor, a dye-impregnated polymer film on  
5 fiber optic detector, a polymer-coated micromirror, an electrochemical gas detector, a  
6 chemically sensitive field-effect transistor, a carbon black-polymer composite, a micro-  
7 electro-mechanical system device and a micro-opto-electro-mechanical system device.

1 30. (New) The method of claim 24, further comprising generating a  
2 response from said sensors and inputting said response to a neural net trained against  
3 known marker gases.

1 31. (New) A method for comparing the analyte profiles of mammalian  
2 breath samples, said method comprising:  
3 (a) contacting an array of sensors with first sample of mammalian breath;  
4 (b) detecting a first set of responses from said array of sensors, wherein  
5 said set of responses is a first sensor array response profile;  
6 (c) analyzing said first sensor array response profile to identify analytes in  
7 said first sample;  
8 (d) storing said first sensor array response profile and the results of the  
9 analysis;  
10 (e) contacting an array of sensors with a second sample of mammalian  
11 breath;